

What is claimed is:

1. An organic-inorganic composite particle comprising:

a) a primary composite particle comprising:

i) an inorganic particle, and

ii) a plurality of polymer particles attached to said inorganic particle; and

b) a polymer layer encapsulating said primary composite particle.

2. The organic-inorganic composite particle according to claim 1 wherein said polymer particles have absorbing groups selected from phosphorus acid groups, phosphorus acid full-ester groups, polyacid sidechain groups, and mixtures thereof.

3. The organic-inorganic composite particle according to claim 1 wherein said polymer particles are attached by covalent bonding to said inorganic particle.

4. The organic-inorganic composite particle according to claim 1 wherein the weight ratio of said polymer particles that are attached to said inorganic particle to said polymer layer is in the range of from 10:1 to 1:10.

5. The organic-inorganic composite particle according to claim 1 having a combined polymer weight of said polymer particles and said polymer layer in the range of from 5 to 90 weight %, based on the weight of said organic-inorganic composite particle.

6. A process for preparing organic-inorganic composite particles, comprising the steps of:

a) providing an aqueous dispersion comprising primary composite particles dispersed in an aqueous medium, wherein each of said primary composite particles comprise: an inorganic particle and a plurality of polymer particles attached to said inorganic particle; and

b) polymerizing at least one monomer in the presence of said primary composite particles to form a polymer layer encapsulating said primary composite particles and to provide said organic-inorganic composite particles.

7. The process according to claim 6 wherein said polymer particles have at least one functional group selected from the group consisting of phosphorus acid groups, phosphorus acid full-ester groups, polyacid sidechain groups, and mixtures thereof.

8. The process according to claim 6 wherein said polymer particles are attached by covalent bonding to said inorganic particle.

9. The process according to claim 6 wherein the weight ratio of said polymer particles that are attached to said inorganic particle to said polymer layer is in the range of from 10:1 to 1:10.

10. The process according to claim 6 wherein said organic-inorganic composite particle has a combined polymer weight of said polymer particles and said polymer layer in the range of from 5 to 90 weight %, based on the weight of said organic-inorganic composite particle.